

Amendment(s) to the Claims

The following listing of claims replaces all prior versions and listings of claims in the present application.

Listing of Claims:

- Claims 1-42 (canceled).

- Claim 43 (withdrawn): The prosthetic limb of claim 67, further comprising a sleeve to be worn over the residual limb.

- Claim 44 (currently amended): A prosthetic limb socket and valve assembly, comprising:

a sleeve to be worn over the residual limb;

a base attached to the an interior distal end of the socket, said base having a proximate surface ^{positioned to face} facing a distal end of a residual limb upon its insertion into said socket, and including at least one channel extending through interior thereto for connecting said proximate surface to the exterior of said socket;

a duct extending through said socket, and connected to said channel; and

a valve coupled to said duct for controlling the flow of air ~~therethrough~~ through said channel caused by insertion of said residual limb into said socket;

wherein the liner-covered residual limb is retained in said socket by means of suction created by expelling the air in said socket through said valve assembly.

- Claim 45 (currently amended): The prosthetic limb and valve assembly of claim 44, wherein said valve is coupled to a pump which provides a ~~forces~~ forced transfer of air to or from the socket interior.

- Claim 46 (previously presented): The prosthetic limb and valve assembly of claim 44, wherein said base includes an attachment means adapted to releasably attach an upright assembly to the distal end of the socket.

- Claim 47 (previously presented): The prosthetic limb and valve assembly of claim 44, wherein said base is adapted to be removably fitted within the socket interior at the distal end of the socket.

- Claim 48 (previously presented): The prosthetic limb and valve assembly of claim 44, wherein said base includes a proximate cushion portion.

- Claim 49 (previously presented): The prosthetic limb and valve assembly of claim 44, wherein said sleeve provides a seal between said residual limb and said socket.

42 - Claim 50 (currently amended): A prosthetic limb comprising:

a sleeve to be worn over the residual limb;

a socket having an interior configured to contain a wearer's sleeve-covered residual limb ~~and said sleeve~~, a distal end, and an inner surface that provides sealing contact with an outer surface of said sleeve; and

a valve assembly removably coupled to the distal end of the socket, providing fluid communication with the socket interior;

wherein insertion of said residual limb into said socket forces the air in said socket out through said valve assembly, thereby creating a vacuum within said socket that retains said residual limb and is maintained by said sealing contact between said inner surface of said socket and said outer surface of said sleeve.

- Claim 51 (previously presented): The prosthetic limb of claim 50, wherein said valve is coupled to a pump which provides a forced transfer of air to or from the socket interior.

- Claim 52 (previously presented): The prosthetic limb of claim 50, further comprising a base attached to the interior distal end of the socket, having a proximate surface, including at least one channel extending through said proximate surface.
- Claim 53 (previously presented): The prosthetic limb of claim 52, wherein said base is adapted to be removably fitted within the socket interior at the distal end of the socket.
- Claim 54 (previously presented): The prosthetic limb of claim 52, wherein said base includes an attachment means adapted to releasably attach an upright assembly to the distal end of the socket.
- Claim 55 (previously presented): The prosthetic limb of claim 52, wherein said base includes a proximate cushion portion.
- Claim 56 (previously presented): The prosthetic limb of claim 50, wherein said sleeve provides a seal between said residual limb and said socket.
- Claim 57 (currently amended): A prosthetic limb socket system configured to receive a residual limb, said prosthetic limb socket system comprising:
 - a sleeve to be worn over the residual limb;
 - a prosthetic limb socket comprising:
 - a proximal opening;
 - a socket wall and a distal end configured to define a socket interior;
 - a channel configured to conduct fluid between said socket interior and an exterior of said prosthetic limb socket; and
 - a check valve releasably coupled to said channel and configured to spontaneously open said channel in response to a socket interior pressure higher

than an exterior pressure and to close said channel in response to said a socket interior pressure substantially equal to or less than said exterior pressure;

wherein a liner-covered residual limb is retained in said socket by means of suction created by expelling the air in said socket through said check valve.

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- Claim 58 (previously presented): The prosthetic limb socket system of claim 57, wherein said valve is coupled to a pump which provides a forced transfer of air to or from the socket interior.
 - Claim 59 (previously presented): The prosthetic limb socket system of claim 57, further comprising a base attached to the interior distal end of the socket, having a proximate surface, including at least one channel extending through said proximate surface.
 - Claim 60 (currently amended): The prosthetic limb socket system of claim 59, wherein said base is adapted to be removably fitted within to the socket interior at the distal end of the socket.
 - Claim 61 (previously presented): The prosthetic limb socket system of claim 59, wherein said base includes an attachment means adapted to releasably attach an upright assembly to the distal end of the socket.
 - Claim 62 (previously presented): The prosthetic limb socket system of claim 59, wherein said base includes a proximate cushion portion.
 - Claim 63 (previously presented): The prosthetic limb socket system of claim 59, wherein said sleeve provides a seal between said residual limb and said socket.
 - Claim 64 (withdrawn): A valve assembly for a prosthetic limb socket, comprising:

a base adapted to be removably fitted within the socket interior at the distal end of the socket, said base having a proximate surface, including at least one channel extending through said proximate surface;

a duct extending through said socket, connected to said channel; and

a valve coupled to said duct for controlling the flow of air therethrough.

42 - Claim 65 (withdrawn): A method for attaching a prosthesis including a suction socket having an open proximal end for receiving a residual limb and a distal end, comprising:

(a) rolling a sleeve over the residual limb;

(b) installing a valve means into said distal end of said suction socket, said valve connected to a duct extending through said socket;

(c) positioning said residual limb with said sleeve into said open proximal end of said suction socket; and

(d) drawing air through said duct by means of a vacuum pump to create a negative pressure between said sleeve and said distal end of said suction socket such that said sleeve is pulled into full engagement within said suction socket.

- Claim 66 (withdrawn): A method for donning or doffing a suction suspension prosthesis, said prosthesis including a sleeve to be worn over the residual limb, a suction socket having an open proximal end for receiving said residual limb and said sleeve and a distal end, comprising:

influencing air pressure between said sleeve and said distal end of said socket;

decreasing the air pressure to a negative pressure to draw said liner and residual limb into said suction socket or increasing the air pressure to a positive pressure to expel said liner and said residual limb from said suction socket.

- Claim 67 (withdrawn): A valve assembly for use with a prosthetic limb having a prosthetic limb socket shaped for receiving a patient's residual limb, the socket having a socket wall, a socket interior, a proximal opening, and a distal end, the valve assembly comprising:

43 a base having a first surface and a second surface, adapted to be fitted within the socket interior at the distal end of the socket such that said first surface faces the socket interior and such that said second surface faces the socket wall, said base including a channel extending therethrough providing fluid communication between said first surface and said second surface;

a first attachment mechanism, carried on said base, adapted to releasably attach an upright assembly to the distal end of the socket when said base is fitted within the socket interior at the distal end of the socket; and

a valve coupled to said base for controlling the flow of air through said channel. ✓

- Claim 68 (withdrawn): The valve assembly of claim 67, wherein said valve assembly further comprises a seal extending from said base, adapted to provide an air-tight seal between said base and the socket wall when said base is fitted within the socket interior at the distal end of the socket.

- Claim 69 (withdrawn): The valve assembly of claim 68, further comprising:

a cushion carrier on said base, having a proximate end and a distal end, said proximate end being adapted to abut a wearer's residual limb.

- Claim 70 (withdrawn): The valve assembly of claim 69, wherein said cushion is formed from an elastomeric material and said cushion includes said seal.

- Claim 71 (withdrawn): The valve assembly of claim 67, wherein said base includes a second attachment mechanism adapted to releasably attach said base within the socket interior.

- Claim 72 (withdrawn): The valve assembly of claim 71, wherein said first and said second attachment mechanisms include a screw- or bolt-receiving hole extending into said base.

- Claim 73 (withdrawn): The valve assembly of claim 67, wherein said valve includes an open/close port, said open/close port allowing transfer of air through said valve when said open/close port is open.

- Claim 74 (withdrawn): The valve assembly of claim 67, wherein said first attachment mechanisms include a screw- or bolt-receiving hole extending into said base.

- Claim 75 (withdrawn): The valve assembly of claim 74, wherein said screw- or bolt-receiving hole is threaded.

- Claim 76 (withdrawn): A valve assembly for use with a prosthetic limb having a prosthetic limb socket shaped for receiving a patient's residual limb, the socket having a socket wall, a socket interior, a proximal opening, and a distal end, the valve assembly comprising:

a base including a flexible exterior, a chamber therewithin, and at least one channel extending into said chamber, said channel being adapted to provide fluid communication between said chamber and the interior of the socket when said base is fitted within the socket interior at the distal end of the socket;

a duct engaged with said base and in fluid communication with said chamber;
and

a valve coupled to said duct for controlling the flow of air therethrough;

whereby said base is adapted to be inserted through the proximal opening and fitted within the said socket interior at the distal end of the socket, and said flexible exterior is adapted to abut the socket wall so as to provide an airtight seal between said base and the socket wall when the base is fitted within the socket interior at the distal end of the socket.

- Claim 77 (withdrawn): The valve assembly of claim 76, further comprising an attachment mechanism carried on a distal end of said base, said attachment mechanism being adapted to secure said base within the distal end of a socket and to attach an upright assembly to the distal end of the socket.

93 - Claim 78 (withdrawn): The valve assembly of claim 77, wherein said attachment mechanism includes a screw- or bolt-receiving hole extending into a distal surface of said base.

- Claim 79 (currently amended): A prosthetic limb, comprising:

a prosthetic limb socket shaped for receiving a patient's residual limb, said socket having a socket wall, a socket interior, a proximal opening, and a distal end;

an upright assembly;

a base fitted within said socket interior at said distal end of said socket, said base including a channel extending into said base and opening onto said socket interior;

an attachment mechanism, carried on said base, for releasably attaching said upright assembly to said an exterior distal end of the said socket; and

a valve coupled to said base for controlling the flow of air through said channel.

- Claim 80 (previously presented): The prosthetic limb of claim 79, further comprising a substantially annular projection extending from said base and providing an air-tight seal between said base and said socket wall.

- Claim 81 (currently amended): A prosthetic limb, comprising:

a prosthetic limb socket shaped for receiving a patient's residual limb, said socket having a socket wall, a socket interior, a proximal opening, and a distal end;

an upright assembly;

EB a base-plate fitted within said socket interior at said distal end of said socket, said base-plate including a channel extending into said base-plate and opening onto said socket interior;

a valve coupled to said base-plate for controlling the flow of air through said channel; and

a bolt extending from said upright assembly, through said socket wall and into said base-plate;

whereby said base-plate facilitates the passage of air from said socket interior and also facilitates the coupling of the upright assembly to the an exterior distal end of said socket.

- Claim 82 (previously presented): The prosthetic limb of claim 81, further comprising an air-tight seal between said base-plate and said socket wall.

- Claim 83 (currently amended): A prosthetic limb, comprising:

a prosthetic limb socket shaped for receiving a patient's residual limb, said socket having a socket wall, a socket interior, a proximal opening, and a distal end;

a base-plate fitted within said socket interior at said distal end of said socket, said base-plate including a channel extending into said base-plate and opening onto said socket interior; and

43 a port communicating with said channel, said port facilitating the coupling of a pump thereto so as to provide a forced transfer of air to or from said socket interior through said channel and said base-plate.